



Serial No. 10/056127

IN THE UNITED STATES  
PATENT AND TRADEMARK OFFICE

Patent Application

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Tung Ching Chiang**

Case: **14-8**

Serial No.: **10/056127**

Filing Date: **January 24, 2002**

Examiner: Group Art Unit: **2681**

Title: **Geolocation Using Enhanced Timing Advance Techniques**

**ASSISTANT COMMISSIONER FOR PATENTS  
WASHINGTON, D. C. 20231**


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Transmitted herewith are nine (9) sheets of formal drawings to be substituted for the informal drawings initially filed in the above-identified application for patent.

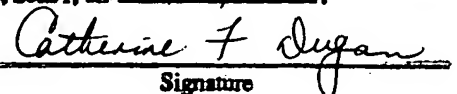
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Respectfully,  
Byron Hua Chen  
Tung Ching Chiang

By   
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973-386-6377

Date: 04/25/02  
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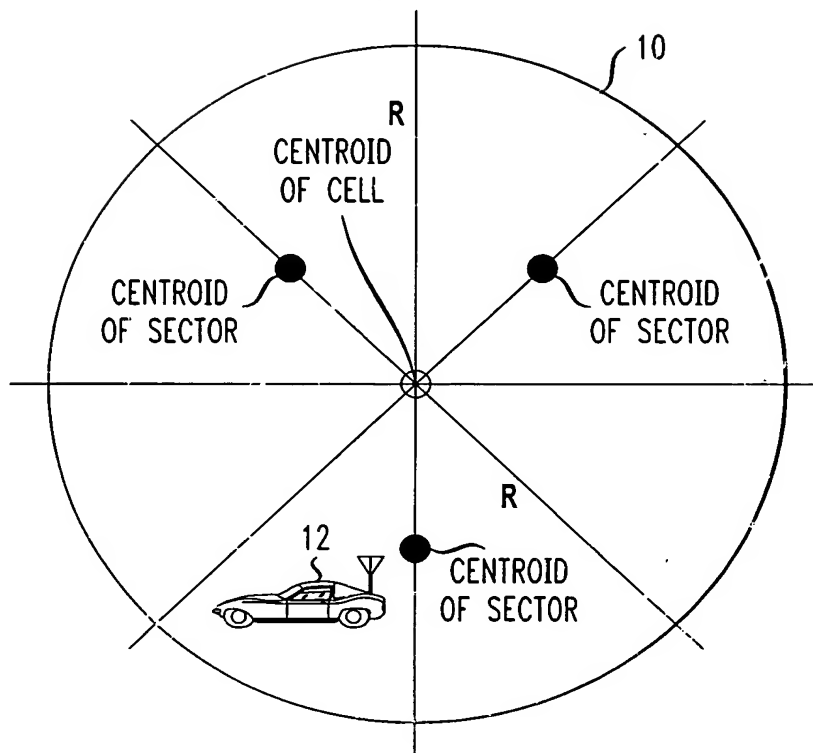
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**FIG. 1**

PRIOR ART



**FIG. 2**

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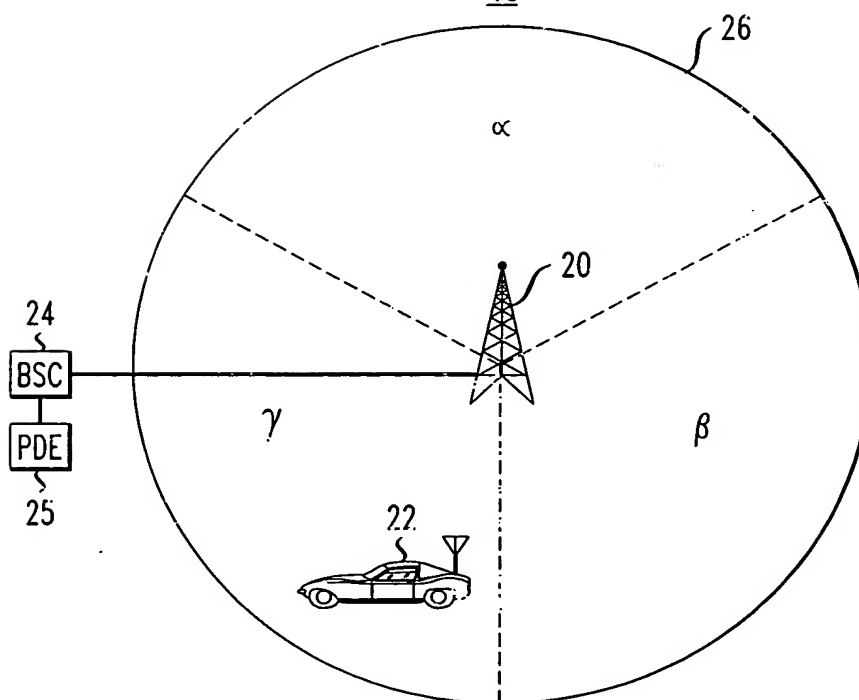
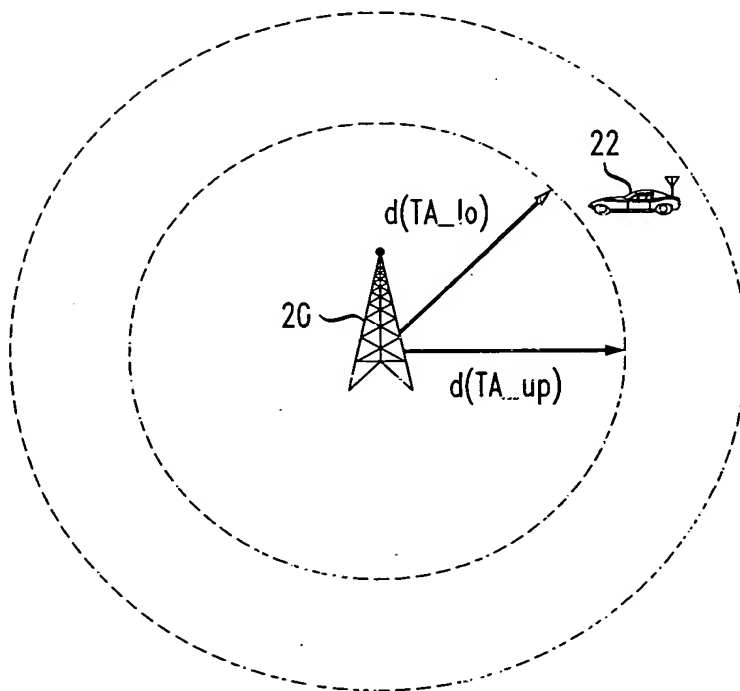


FIG. 3

TIMING ADVANCE (TA) IN GSM

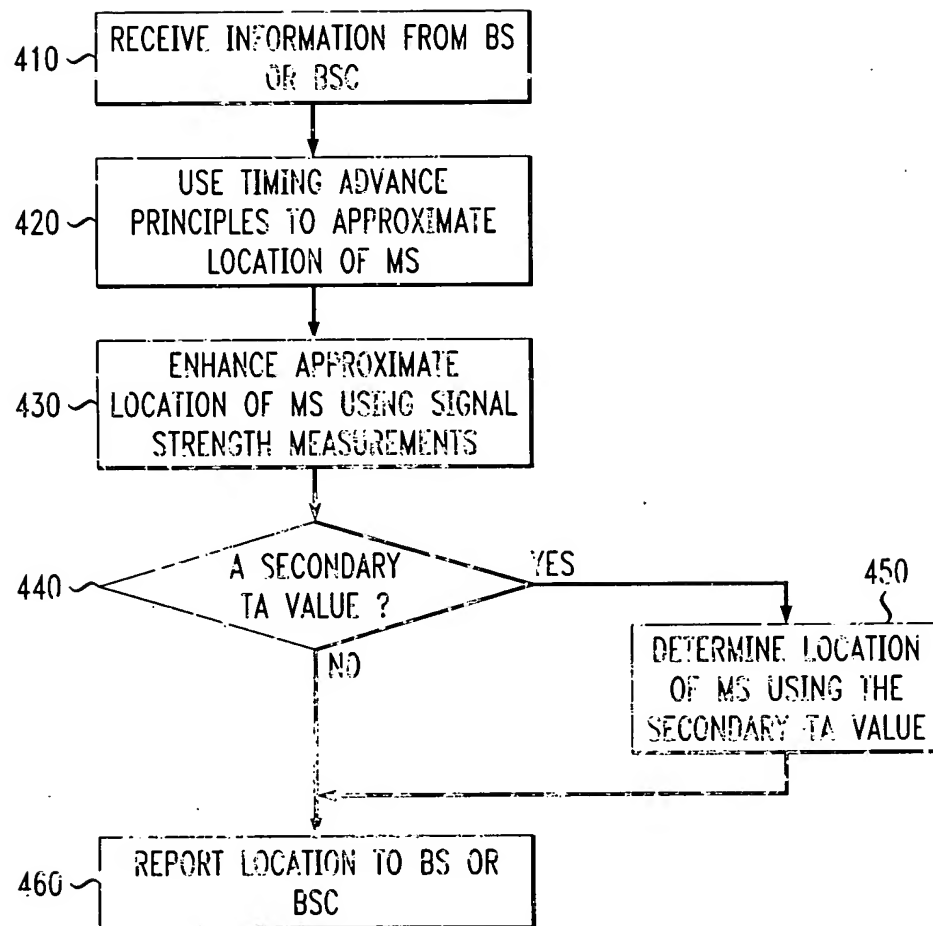


TA RESOLUTION:  
 $T/2 = 24/13 \mu s$ , OR 554 m  
MEASURED IN ONE-WAY-DELAY

TA RANGE:  
0-63, OR 0-219 IF  
EXTENDED TA IS SUPPORTED

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FIG. 4

400

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*FIG. 5*

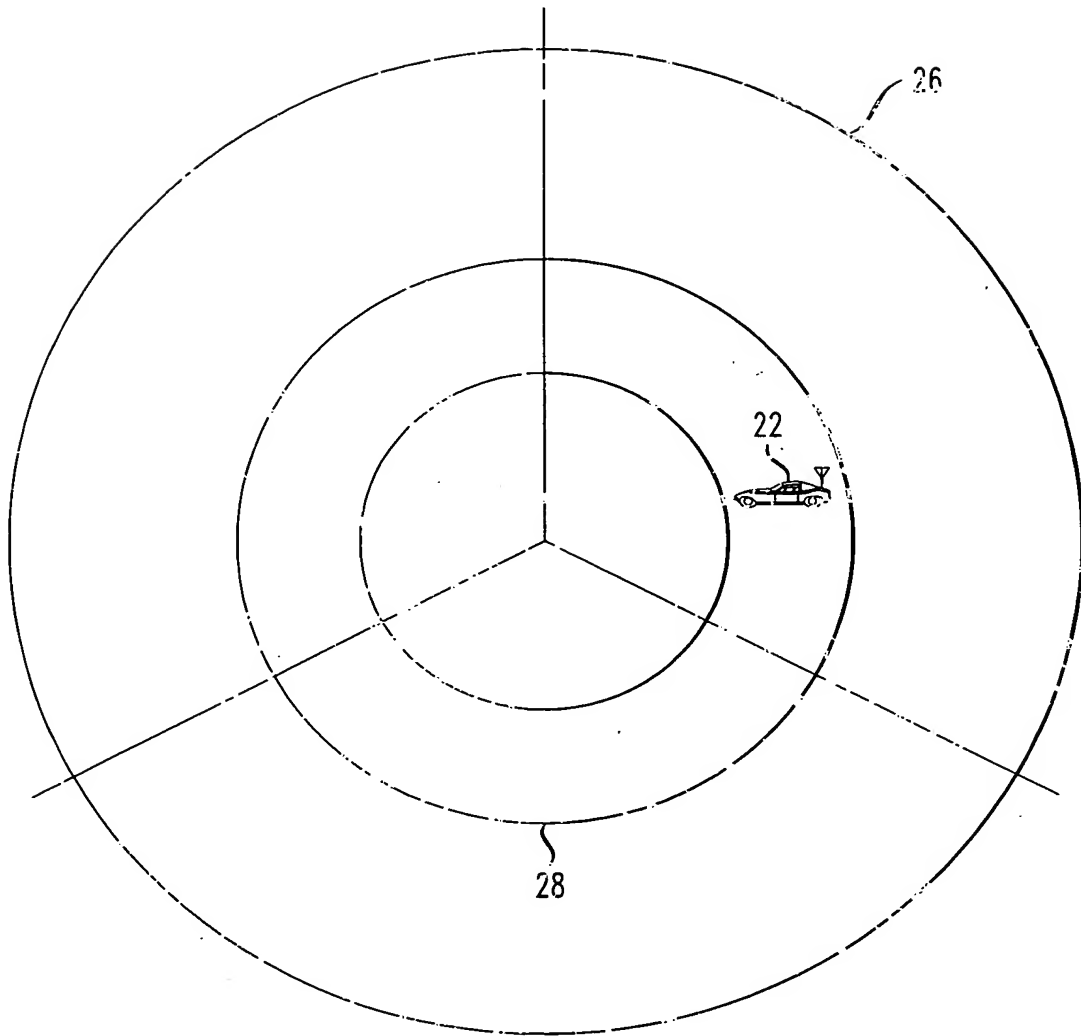
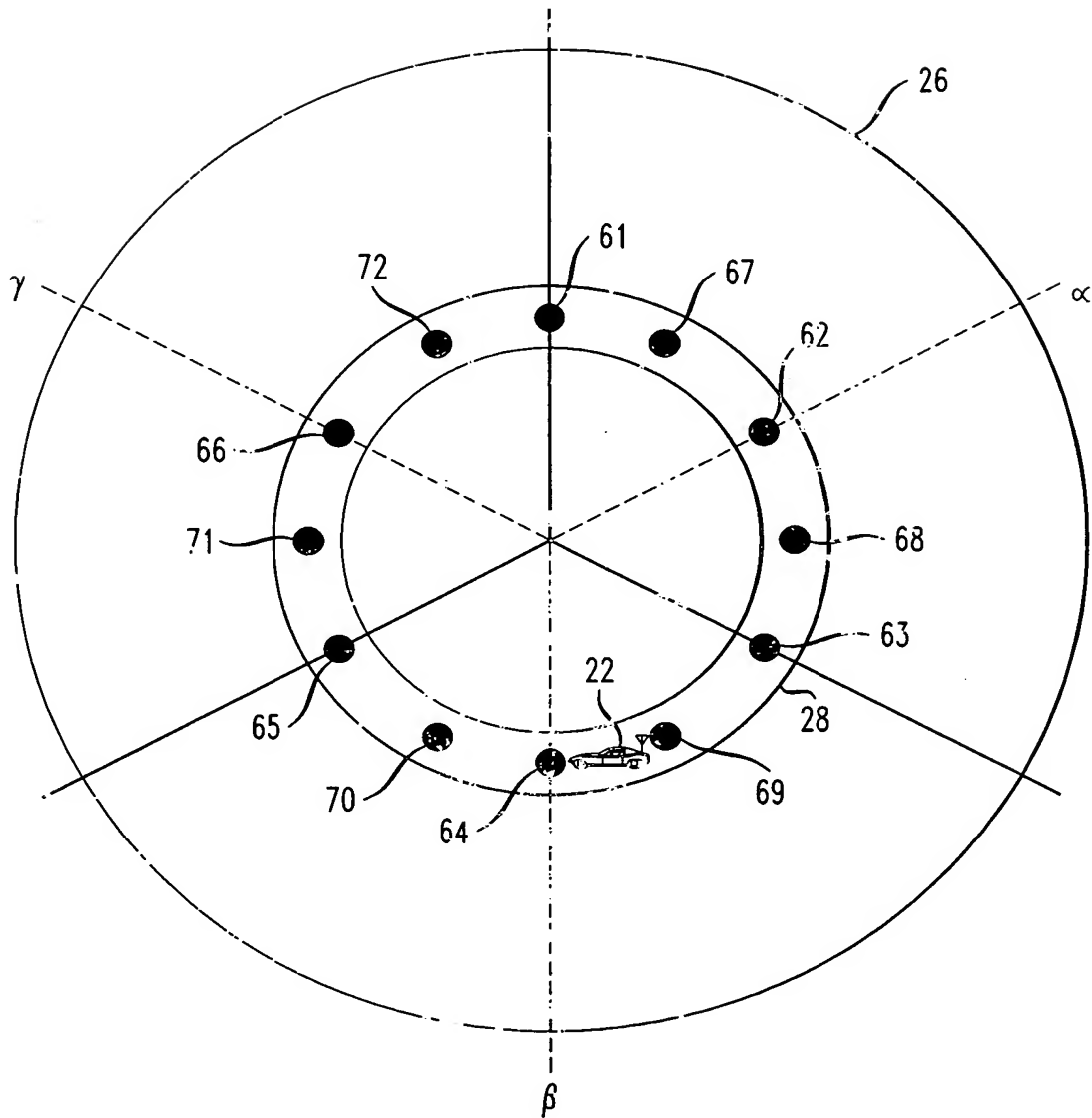
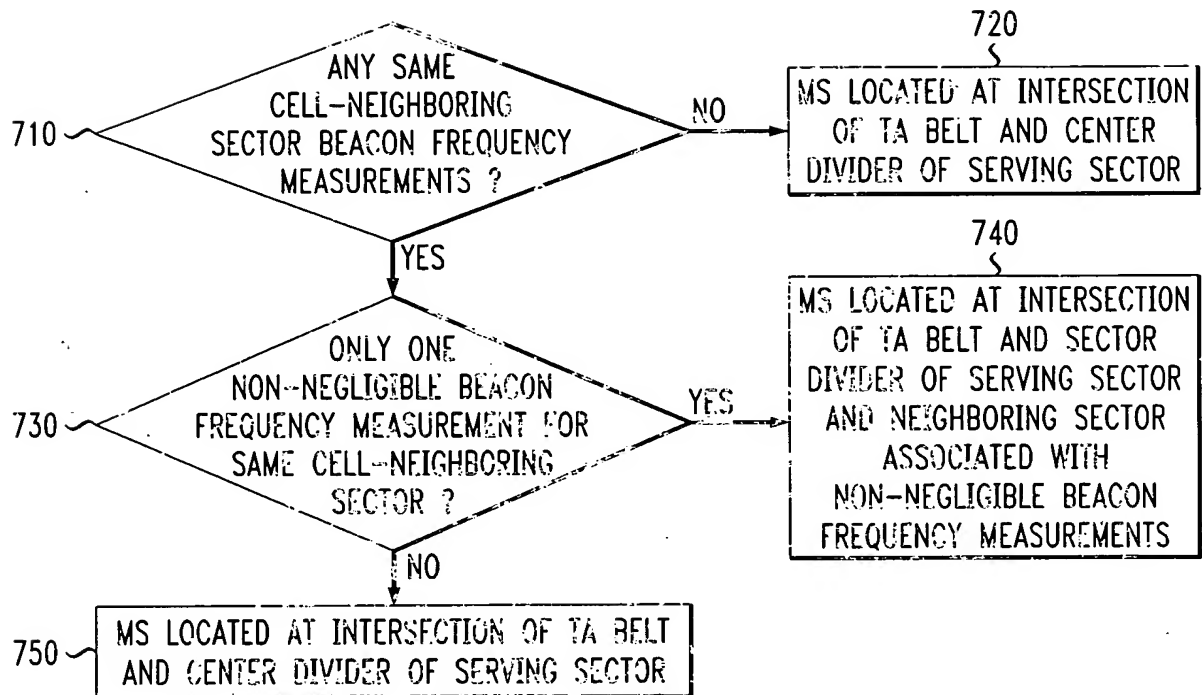


FIG. 6



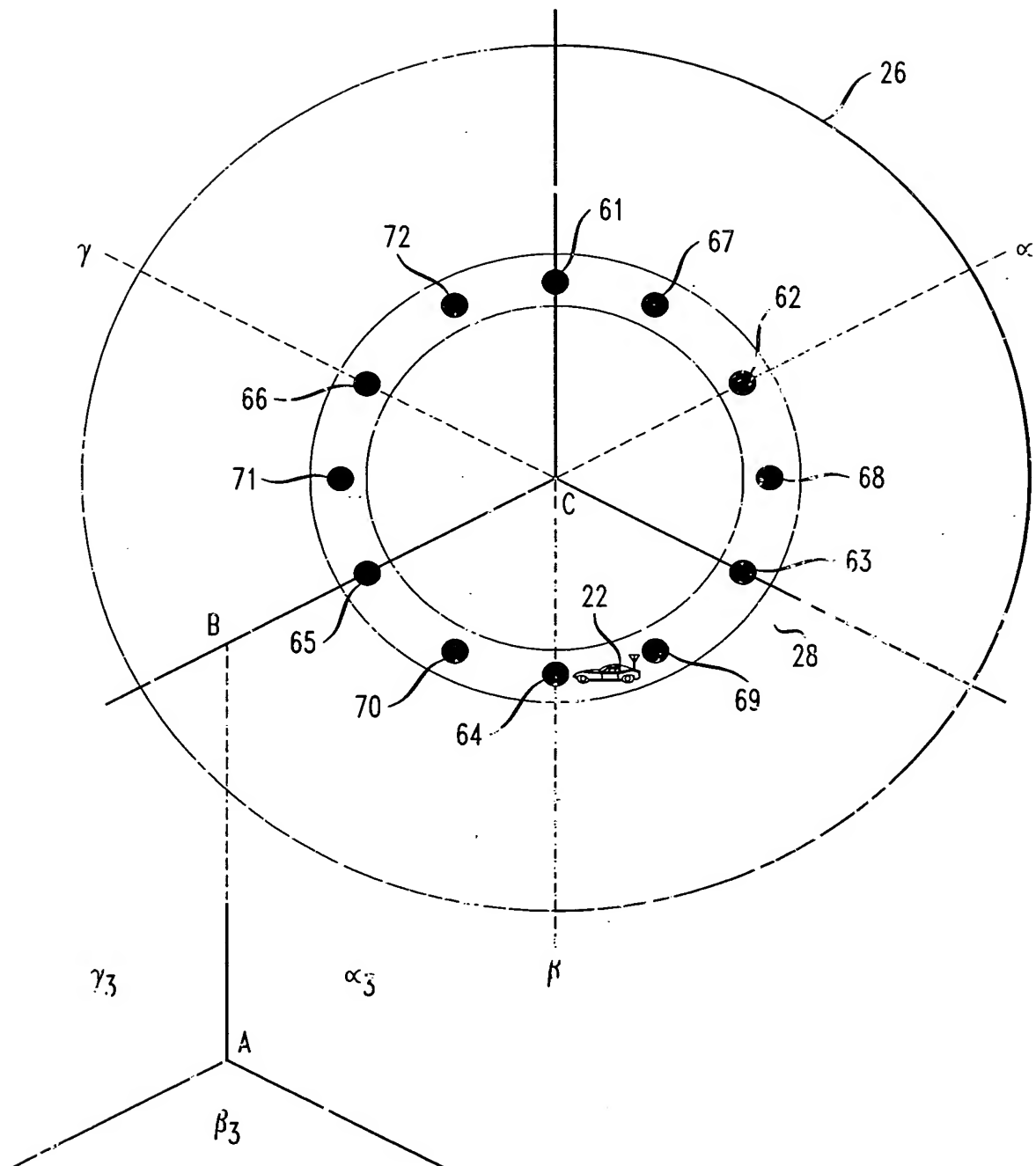
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FIG. 7

700

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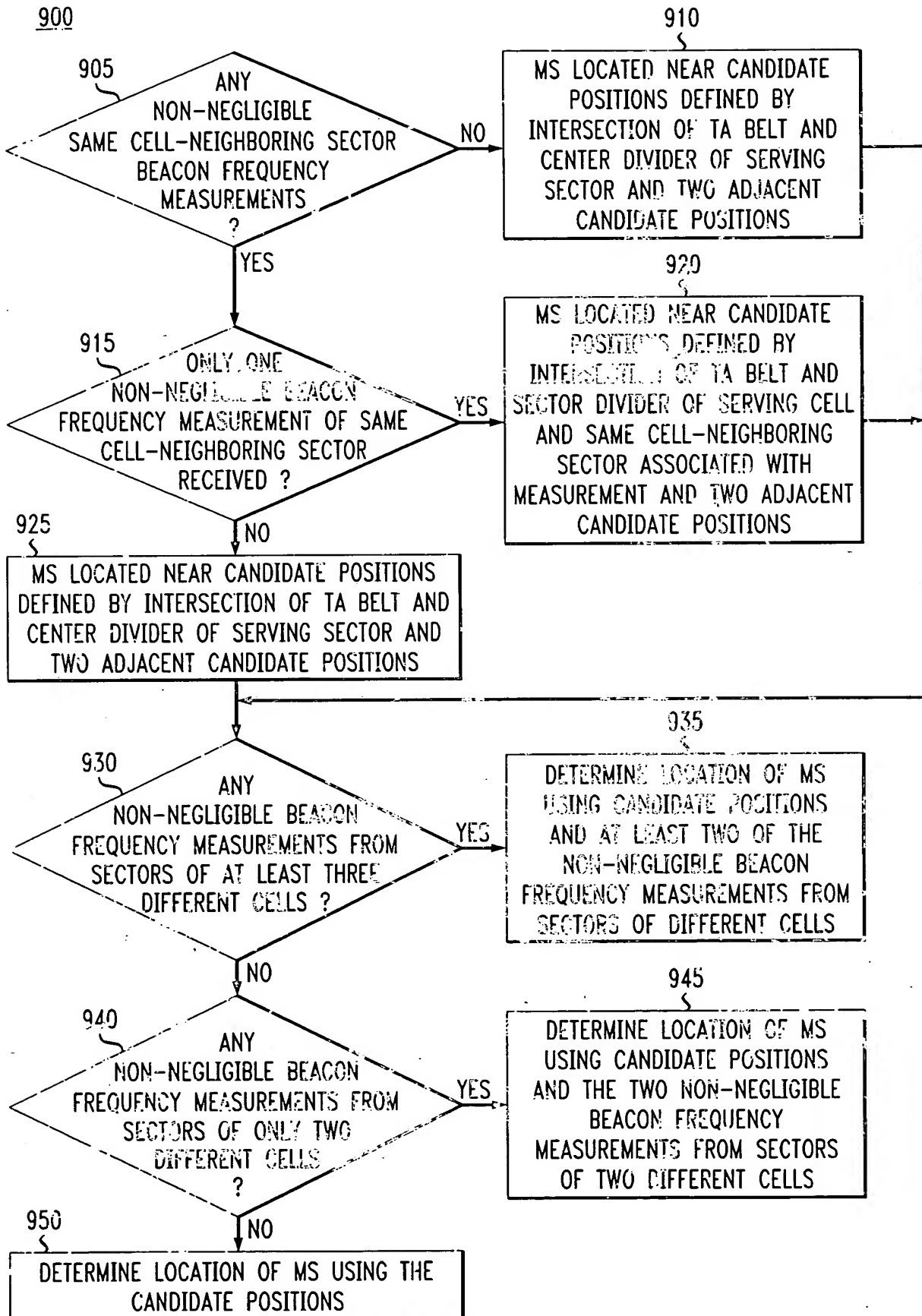
FIG. 8





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FIG. 9



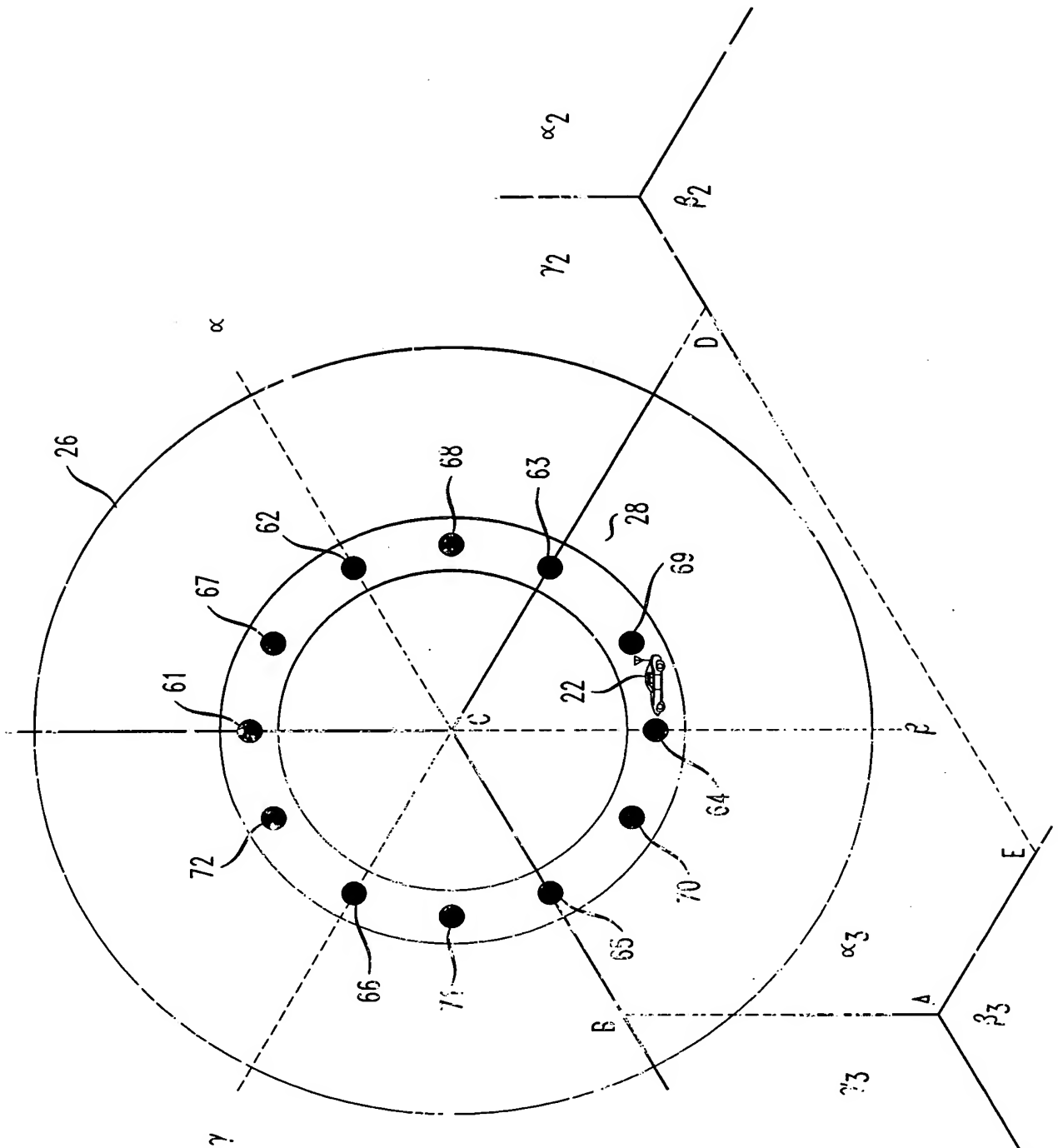


FIG. 10